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ABSTRACT

Since psychopathology may be linked to substance abuse behavior, one aspect of that relationship should have an effect on the development and consequences of the other. This study sought to determine whether psychopathology would decrease after a 28-day period of alcoholism treatment. Thirty Caucasian adults who had sought inpatient treatment for alcoholism were randomly selected and tested. Results indicate that psychopathology did significantly decrease on all six symptom categories, particularly depression, anxiety, and interpersonal sensitivity. Likewise, all three global indices of a test designed to reflect the psychological symptom patterns of psychiatric patients also showed some decrease. The least significant result was obtained for Obsessive/Compulsive scores. The data demonstrate that inpatient alcohol treatment can be effective in decreasing psychopathology. It is argued that the randomization strategy in this study controlled for many other variables that might have had an effect on the decrease of psychopathology, such as gender effects, number of previous treatments, and severity of alcoholic symptoms. While it is conceded that the lack both of a control group and of a multiculturally diverse sample limited this research, it is hoped that future studies will be able to address these and other concerns. Contains 14 references. (RJM)

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THE RELATIONSHIP BETWEEN ADDICTION AND PSYCHOPATHOLOGY IN A SAMPLE OF INPATIENT ADULT ALCOHOLICS

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ABSTRACT

This study examines the relationship between alcoholism and psychopathological behavior. Thirty adults who were treated in an inpatient substance abuse program showed significant decreases on all categories of psychopathology (as measured by the SCL-90-R) from pretest at admission to posttest at discharge.

INTRODUCTION

Substance abuse behavior and psychopathology can become linked over time. One part of the relationship exacerbates the other, thus creating a vicious cycle and a feedback loop. It has been reported that there is a high incidence of psychiatric disorders or prevailing psychopathology among alcoholics (Hesselbrock, Meyer, & Keener, 1985). Due to the possibility that psychopathology may be linked to substance abuse behavior, one aspect of that relationship should have an effect on the development and consequences of the other. Therefore, by treating one part of the relationship, the other part should change, i.e., the treatment of the addictive disorder should reduce the presenting psychopathology.

The term psychopathology as used here pertains to certain abnormal processes of the mind. Specific symptoms can operationalize psychopathology. For example, depression, anxiety, and obsessions or compulsions are common forms of psychopathology. These symptoms can result in an individual lacking the ability to function at an optimal level, both personally and interpersonally.

An individual with an additional substance abuse disorder can possess a higher level of psychopathology. Alcoholics are known to suffer from depression, anxiety, and somatic complaints (Cary, Cary, & Meisler, 1991). Treatment for an addictive disorder does not often include treatment for the accompanying psychopathology;

thus, most substance abuse treatment centers focus on the addictive disorder and assume that the psychopathology will decrease. For example, symptoms of depression are common among alcoholics in treatment. Depression is usually highest upon admission and then decreases during treatment (Dorus, Kennedy, Gibbons, & Ravi, 1987; Mirin, Weiss, Sollogub, & Michael, 1984).

The purpose of this study was to look at a randomly selected sample of alcoholics at an inpatient treatment center. Their psychopathology was measured using the Symptoms Check List-Revised (SCL-90-R) before and after treatment to determine if the treatment for alcohol abuse had a positive effect on the level of psychopathology.

There has been a growing interest in the prevalence of psychiatric disorders in alcohol abusers and in the relationship between psychopathology and alcoholism. Researchers have begun to focus their attention on co-morbidity or dual diagnosis. New interest has been developing because of the large number of addicted persons having coexistent psychopathology and addiction. Previous studies have shown a high occurrence of both psychopathology and addiction. For example, Hesselbrock, Meyer, and Keener (1985)reported higher rates of antisocial personality disorder (APD) and depressive disorders among substance abusers, especially alcoholics, than among the general population. Alcoholic subjects reveal a symptomatology two to five times as severe as that observed in the general population (Mercier, Brochu, Girard, Gravel, Quellet, & Pare, 1992). Depression,

obsessive-compulsive behaviors, interpersonal sensitivity, and anxiety are reported on clinical self-report questionnaires more frequently by alcoholics than by control groups (Mercier et al., 1992).

Some studies have been conducted using mentally ill chemical abusers or MICAs. Research conducted by Cary, Cary, and Meisler, (1991) focused on such patients. Their research compared non-substance abusing mentally ill patients with MICAs, using the SCL-90-R. MICAs reported more global psychiatric distress than the comparison group of non-substance-abusing psychiatric patients. Furthermore, it was more common for substance abusers to experience symptoms of depression and anxiety as well as multiple somatic disturbances.

Many studies have focused on the specific relationship between psychopathology and addictive disorders. Overconsumption of psychotropic substances can have repercussions on mental health and, conversely, mental health problems are often the reason for an inappropriate consumption of these substances (Mercier et al., 1992).

Which comes first, the chicken or the egg? Traditional research on psychopathology and addictive disorders tended to presume that the presence of a substance abuse disorder is a consequence of psychopathology (Meyer, 1986). The psychopathology has been thought to be etiologically related to the substance abuse disorder. But on the other hand, Meyer (1986) describes five possible relationships between addictive behavior and

coexisting psychopathology. They are as follows:

(a) Psychopathology may serve as a risk factor for addictive disorders.

(b) Psychopathology may modify the course of an addictive disorder in terms of rapidity of course, response to treatment, and long-term outcome.

(c) Psychiatric symptoms may develop in the course of chronic intoxication.

(d) Some psychiatric disorders may develop as a consequence of use.

(e) Substance-using behavior and psychopathology will become meaningfully linked over the course of time.

This information indicates that the relationship may not simply be one of cause and effect, but of a meaningful linkage between the two factors. Therefore, psychopathology may not be the cause of alcoholism and alcoholism may not be the cause of psychopathology; however, once they occur, they entrench and perpetuate one another (Meyer, 1986).

The SCL-90-R has been used with alcoholic populations in numerous studies. Mercier et al. (1992) investigated the general trends in the responses of alcoholics to the SCL-90-R. The SCL-90-R was administered to 712 inpatient alcoholics in their third week of residence. When alcoholics were compared with the general population, the different indices were much higher for alcoholics than for non-alcoholics. In an older study, Derogatis (1973) reported results for 44 acute male alcoholics using the SCL-90-R.

Results indicated that the global scores and scores for the symptom dimensions were higher than those of the general population.

Schaefer, Sobiefaj, and Hollifield (1987) established correlations between the severity of alcoholism and higher scores on certain rating scales of the SCL-90-R. Haver (1986) conducted a longitudinal study over three to ten years on 44 females using the SCL-90-R. Symptoms were more severe and more numerous among alcoholics than among women who drank lightly or moderately.

DeSoto, Clinton, O'Donnell, and Alfred (1985) compared the level of symptomatology and the duration of abstinence in ex-alcoholics, both male and female, using the SCL-90-R. Results revealed high levels of symptomatology for subjects in early months of abstinence. Symptomatology decreased progressively with prolonged abstinence, approximating normal levels for subjects abstinent 10 years or more.

METHOD

Subjects

This study was a substudy of a larger project funded by the National Institute of Alcoholism and Alcohol Abuse (NIAAA). Since the purpose of this study was to look at the effectiveness of treatment for psychopathology among inpatient alcoholics, it was quite simple to obtain subjects from the larger project that was focused on the same population.

The sample for this study consisted of Caucasian adults from the suburban area of a large Midwestern city who sought inpatient treatment for alcoholism. All subjects fit the DSM-III-R (American Psychiatric Association, 1987) criteria for alcohol dependence. A sample of 30 subjects was randomly selected from a total population of N=300. The sample was comprised of 19 males (63%) and 11 females (37%) with an age range of 37-73 years (mean age = 49 years). The subjects were all residents in a 28-day inpatient substance abuse treatment center. The mean length of stay at the center for this group of subjects was 24 days. Consent forms were obtained from all of the participants in this study.

Instrument

The Symptom Check List-90-Revised (SCL-90-R) by Derogatis and his associates (1976) was the instrument used in this study. The SCL-90-R is a 90-item self report symptom inventory designed to reflect the psychological symptom patterns of psychiatric patients. The questionnaire is broken down into nine symptom categories: Somatization (SOMA), Obsessive-Compulsive (OB/COMP), Interpersonal Sensitivity (INT/SENS), Depression (DEP), Anxiety (ANX), Hostility (HOST), Phobic Anxiety (PHOB/ANX), Paranoid Ideation (PAR/ID), and Psychoticism (PSYCHO). A tenth dimension, labelled Additional (ADD), is composed of various items that relate to appetite and/or sleep. The instrument uses a 5-point Likert scale ranging from "not at all" to "extremely."

The SCL-90-R also contains three global indices. The Global Symptom Index (GSI) measures the total intensity of the symptoms. The Positive Symptom Distress Index (PSDI) measures the average intensity of the symptoms and the Positive Symptom Total (PST) is the total number of items with non-zero ratings.

Internal consistency and test-retest reliability estimates have been reported for the SCL-90-R. Internal consistency measures on all nine scales ranged from .77 to .90 and test-retest reliability measures ranged between .78 and .90 (Derogatis, 1977). Derogatis, Rickels, and Rock (1976) investigated the criterion validity of the SCL-90-R and reported a favorable comparison with subscales of the MMPI.

The use of the SCL-90-R with alcoholic populations dates back to the origins of the scale (Mercier et al., 1992).
Over time, the SCL-90-R has proven itself to be a reliable and valid measure of psychopathology for various populations.

Procedures

The SCL-90-R was administered to the subjects after detox, approximately three to five days into treatment. At the time of testing, the subjects were informed that their participation was voluntary and that all results would be kept confidential. The subjects then participated in the regular treatment program for 3-4 weeks.

This treatment program is based on the Minnesota Model (Cook, 1988). This model uses four main criteria:

(a) The possibility of change.

(b) The "Disease concept."

(c) Treatment goals.

1. Abstinence from all mood-altering drugs.

2. Improvement of lifestyle.

3. Education about the disease.

(d) The principles of AA.

Prior to discharge, the SCL-90-R was again administered to the subjects. The participants were not told that they were being retested in order to determine potential changes in their scores; it was hoped that this strategy would reduce response bias.

RESULTS

Scores for all 30 subjects were analyzed for six of the nine symptom categories of the SCL-90-R; scores for Phobic Anxiety, Paranoid Ideation, and Psychoticism were omitted. Focus was placed on the more classic symptoms of alcohol dependence, such as depression, anxiety, interpersonal sensitivity, etc. These six scales and the three global indices were analyzed using dependent *t*-tests with *a priori* levels of significance of 0.025.

1. The hypothesis concerning Somatization scores was rejected at the 0.001 level of significance. Data relevant to this hypothesis are presented in Table 1.

TABLE 1: DEPENDENT T-TEST FOR SOMA SCORES

	Mean:	SD:	df:	t:	Sig:
Pre	1.18	.98			
Post	.71	.73			
Diff	[.47]	.86	28	4.05	0.001

=Difference between pretest and posttest scores

2. The hypothesis concerning Obssesive/Compulsive scores was rejected at the 0.02 level of significance. Data relevant to this hypothesis are presented in Table 2.

TABLE 2: DEPENDENT T-TEST FOR OB/COMP SCORES

	Mean:	SD:	df:	t:	Sig:
Pre	1.50	1.12			
Post	1.16	1.07			
Diff	[.34]	1.09	28	2.56	0.02

3. The hypothesis concerning Interpersonal Sensitivity scores was rejected at the 0.001 level of significance. Data relevant to this hypothesis are presented in Table 3.

TABLE 3: DEPENDENT T-TEST FOR INT/SENS SCORES

	Mean:	SD:	df:	t:	Sig:
Pre	1.29	1.02			
Post	.73	.70			
diff	[.56]	.86	28	3.53	0.001

4. The hypothesis concerning Depression scores was rejected at the 0.001 level of significance. Data relevant to this hypothesis are presented in Table 4.

TABLE 4: DEPENDENT T-TEST FOR DEP SCORES

	Mean:	SD:	df:	t:	Sig:
Pre	1.79	1.03			
Post	1.07	.82			
Diff	[.72]	.93	28	4.16	0.001

5. The hypothesis concerning Anxiety scores was rejected at the 0.001 level of significance. Data relevant to this hypothesis are presented in Table 5.

TABLE 5: DEPENDENT T-TEST FOR ANX SCORES

	Mean:	SD:	df:	t:	Sig:
Pre	1.30	1.02			
Post	.77	.83			
Diff	[.53]	.93	28	3.74	0.001

6. The hypothesis concerning Hostility scores was rejected at the 0.001 level of significance. Data relevant to this hypothesis are presented in Table 6.

TABLE 6: DEPENDENT T-TEST FOR HOST SCORES

	Mean:	SD:	df:	t:	Sig:
Pre	.87	.93			
Post	.45	.74			
Diff	[.42]	.84	28	2.88	0.001

7. The hypothesis for the Global Severity Index was rejected at the 0.001 level of significance. Data relevant to this hypothesis are presented in Table 7.

TABLE 7: DEPENDENT T-TEST FOR GSI SCORES

	Mean:	SD:	df:	t:	Sig:
Pre	1.27	.82			
Post	.79	.66			
Diff	[.48]	.74	28	4.24	0.001

8. The hypothesis for the Positive Symptom Total was rejected at the 0.001 level of significance. Data relevant to this hypothesis are presented in Table 8.

TABLE 8: DEPENDENT T-TEST FOR PST SCORES

	Mean:	SD:	df:	t:	Sig:
Pre	49.63	24.62			
Post	39.07	23.99			
Diff	[10.56	24.30	28	3.04	0.001

9. The hypothesis for the Positive Symptom Distress Index (PSDI) was rejected at the 0.001 level of significance. Data relevant to this hypothesis are presented in Table 9.

TABLE 9: DEPENDENT T-TEST FOR PSDI SCORES

	Mean:	SD:	df:	t:	Sig:
Pre	2.08	.60			
Post	1.62	.54			
Diff	[.46]	.57	28	4.57	0.001

These data confirm that there is a decrease in psychopathology on all six categories of symptoms and all three global indices of the SCL-90-R. In every case, the mean is significantly lower from pretest to posttest. The results indicate that psychopathology did decrease during the 28 days of treatment; thus, this program for alcohol dependence demonstrated a positive effect on the reduction of psychopathology.

DISCUSSION

The objective of this study was to determine whether or not psychopathology would decrease after a 28-day period of alcoholism treatment. The results indicated that psychopathology did significantly decrease on all six symptom categories and all three global indices of the SCL-90-R. The study utilized a randomized 1-group pretest/posttest experimental design. A total of 30 subjects was selected from the inpatient alcohol treatment center of a Midwestern suburban hospital.

As noted in the literature review, there have been a number of studies that have investigated the level of coexistent psychopathology and alcoholism in various populations. Derogatis, Rickels, and Rock (1976) and Mercier et al. (1992) have reported studies revealing that psychopathology is greater in alcoholics than in the general population and that it decreases coincidentally with maintained abstinence.

It is important to note that the most classic symptoms among alcoholics (e.g., depression, anxiety, and interpersonal sensitivity) all showed significant decreases at posttest. It is also worth noting that the least significant result was obtained for Obsessive/Compulsive scores; the exact meaning of this finding is not presently understood. Thus, these data do indeed demonstrate that inpatient alcohol treatment can be effective in decreasing psychopathology. This inference is strengthened by the fact that the subjects were randomly selected; so, this

randomization strategy controlled for many other variables that might have had an effect on the decrease of psychopathology. For example, the randomization controlled for gender effects, number of previous treatments, degree of psychopathology, severity of alcoholic symptoms, and motivation for change.

One limitation of this study is that it did not include a control group. If a control group had showed decreases in psychopathology without treatment, we could not attribute that decrease to alcoholism treatment alone. However, it is obvious that a control group approach would not have been possible within the context of an alcoholism treatment program. Another limitation is that this study did not include a multiculturally diverse sample. Thus, it is not representative of the general population of alcoholics. Whether these results that were obtained from an exclusively Caucasian middle class sample would generalize to other ethnic or class groups is in question.

Additional research might examine different types of treatments for alcoholic populations. Perhaps more studies focusing on inpatient versus outpatient treatment programs could be done to determine which of these approaches is more effective in reducing psychopathology. Although the present study did not address the issue of addictive behavior and psychopathology in terms of a predictive relationship, it is clearly an issue of much interest. It is possible that future research will begin to solve the puzzle of the directionality of this important relationship.

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